# PORTLAND HARBOR:
## *The State of the River in 2014*

# Goal

- To cooperate with EPA to identify appropriate remedial options for Portland Harbor as it exists today

# Purpose of Meeting

- To present the findings of a 2014 sediment sampling study that addresses questions raised by EPA upon review of 2012 LWG fish tissue data
- To increase awareness and understanding of the successful natural recovery processes underway at Portland Harbor
- To provide additional data and evaluations relevant to the selection of an appropriate remedy in the context of the current condition of Portland Harbor

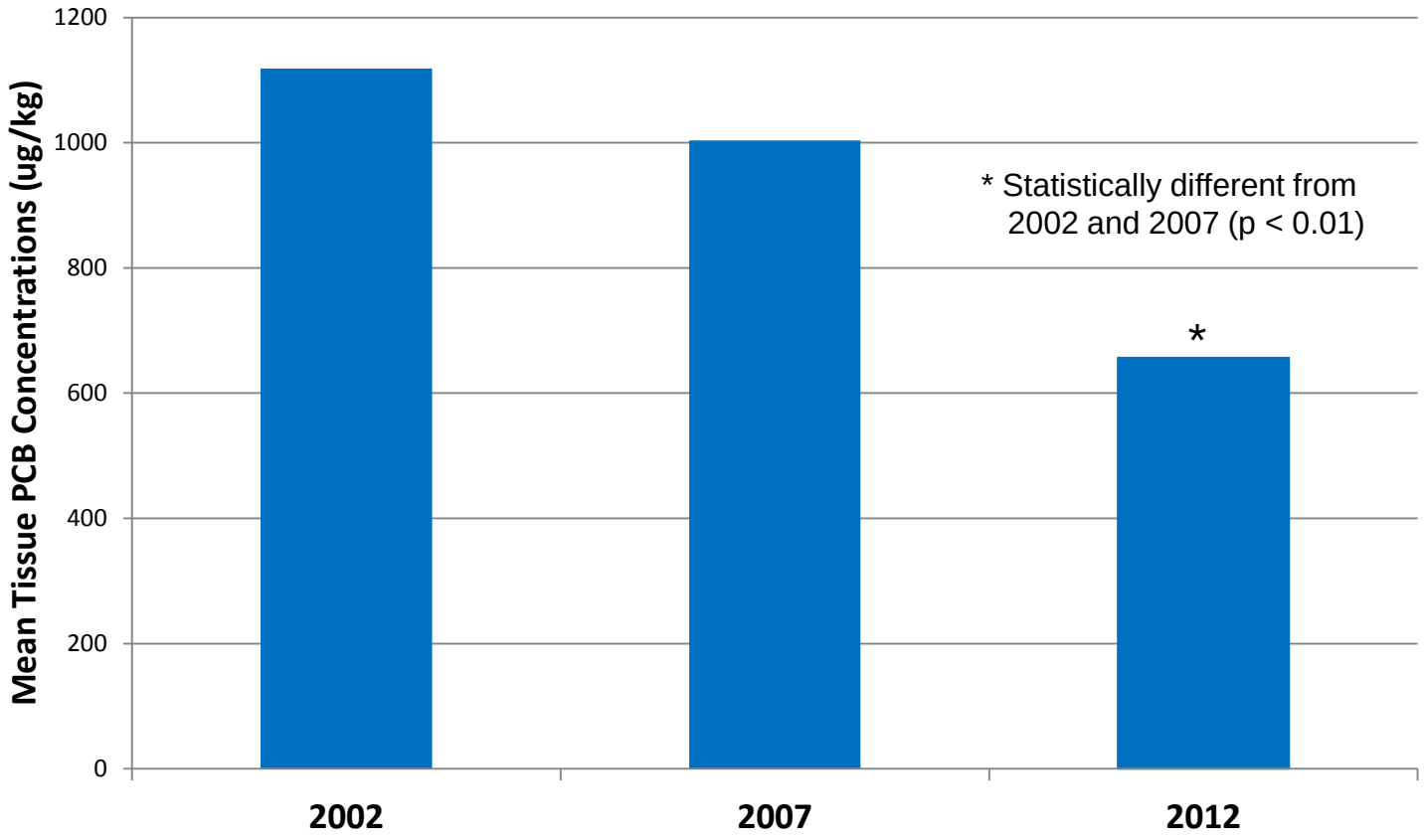
# Introduction

- In 2012, the Lower Willamette Group collected small mouth bass tissue samples for analysis at EPA's request
- The results of the tissue analysis raised important questions relevant to Portland Harbor remedy, since most of the data USEPA is using is at least 10 years old
- In addition to responding to EPA's request for data, our coalition of Portland Harbor PRPs felt the results were important enough to warrant additional evaluation and sediment studies
- We are providing our findings to EPA now because they need to be considered in the finalization of the FS and development of the proposed cleanup plan

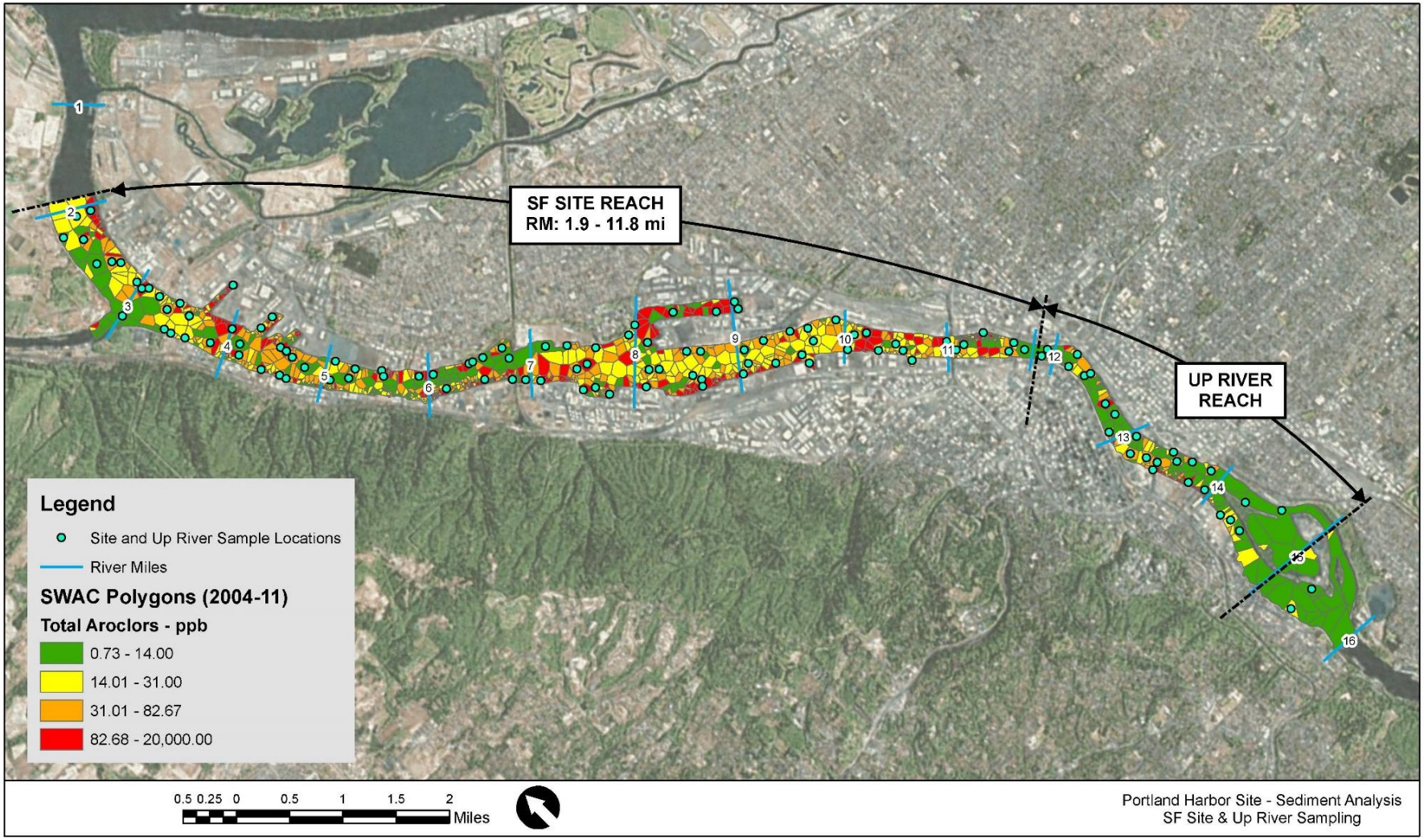
# Introduction

- In 2014, we collected surface sediment samples for PCB analysis to determine if decreasing fish tissue concentrations were a result of improving sediment conditions in Portland Harbor
- The 2014 sediment data correlates well with other recent studies including fish tissue data, observed benthic community recovery, and the coupled sediment transport-food web model developed by LWG for EPA
- Evaluation of the 2014 data and other recent data suggests natural recovery of surface sediments is compelling and is an important factor when selecting the site remedy

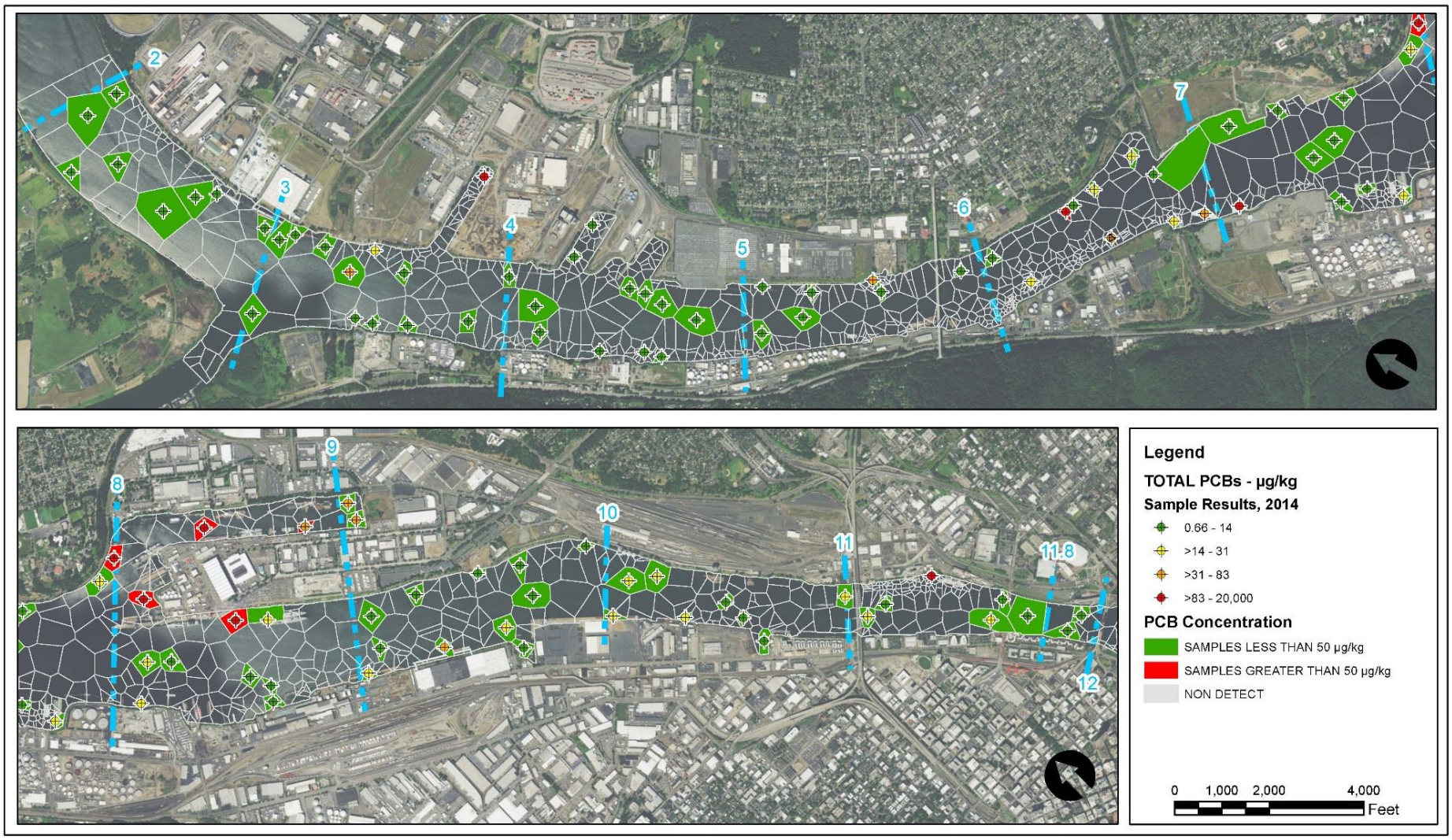
# Fish Tissue Sampling: Historical vs. 2012



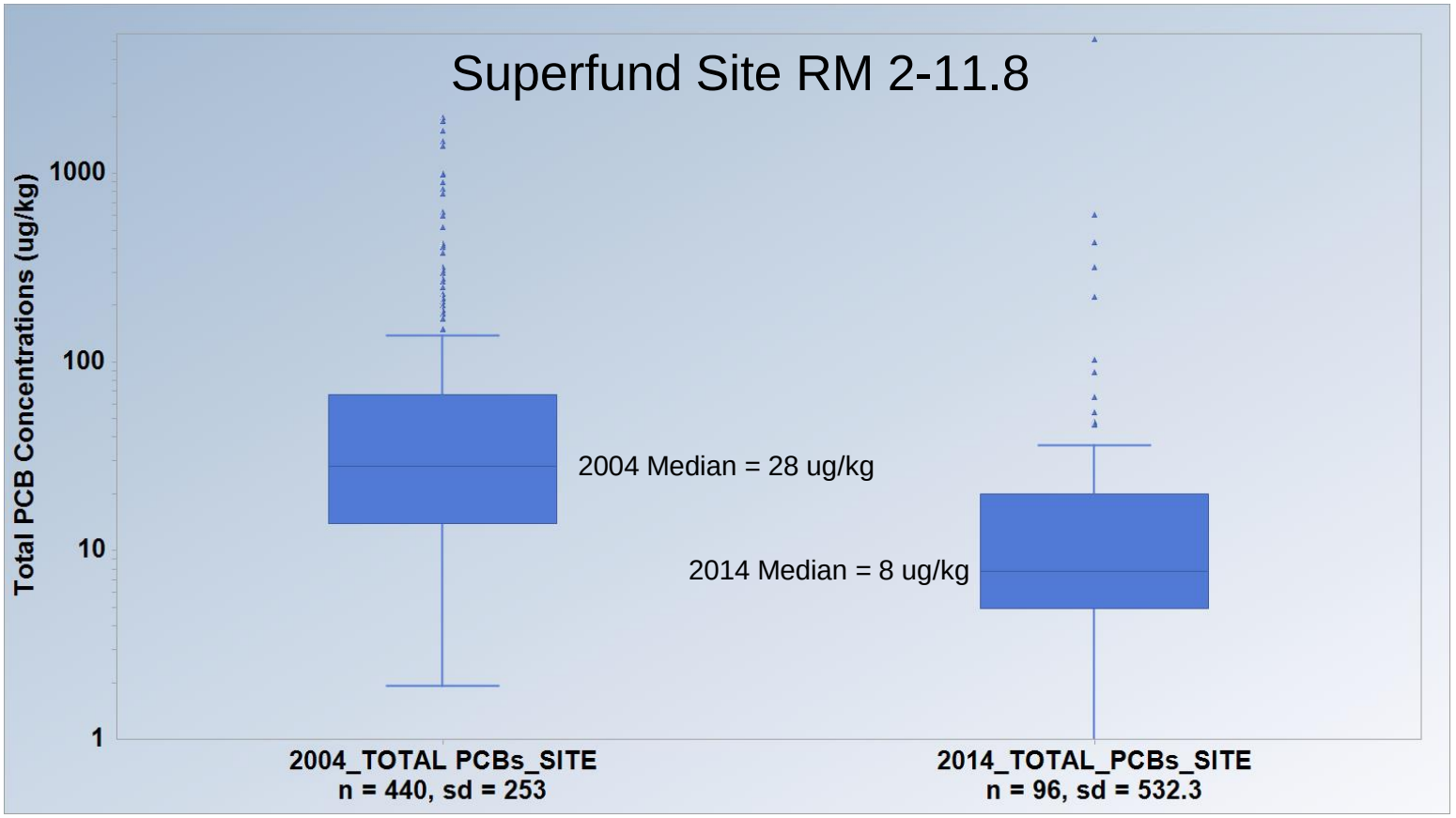
# 2014 Sampling Locations



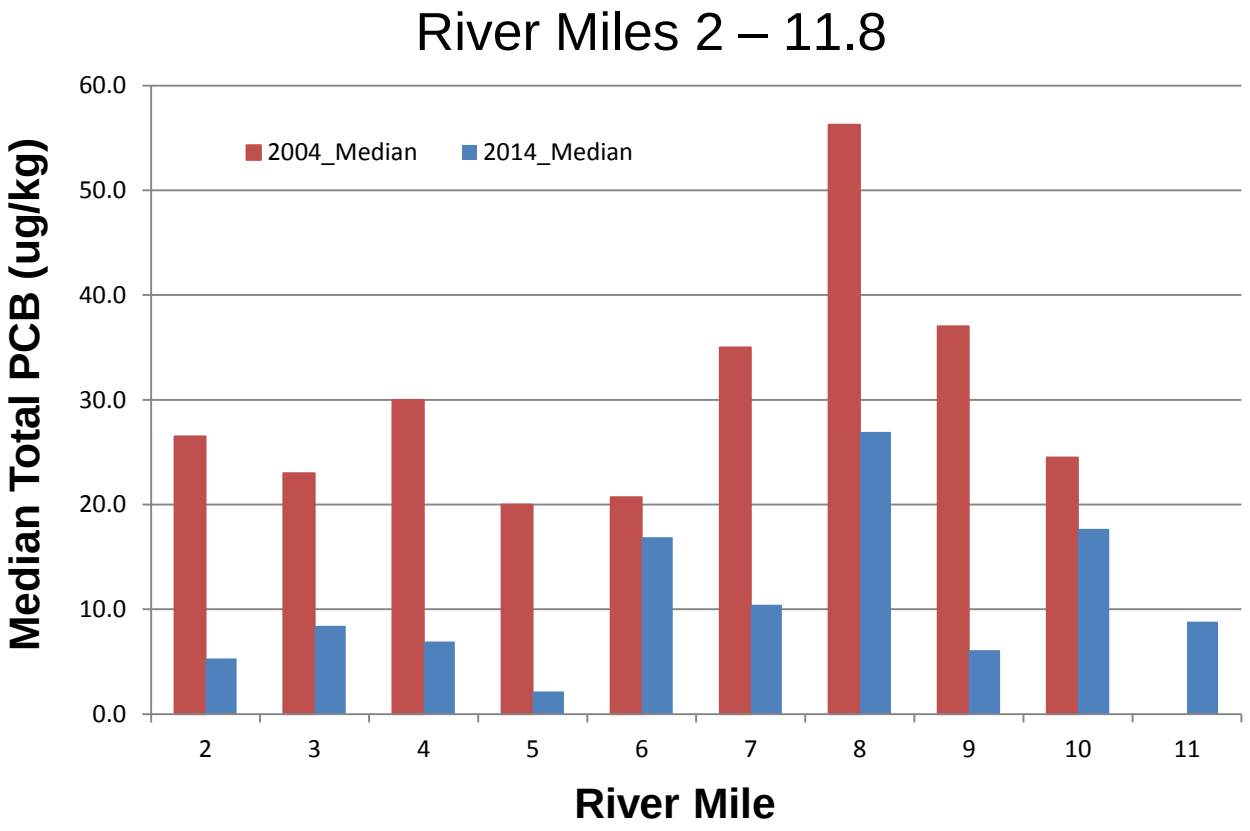
# 2014 Sediment Results



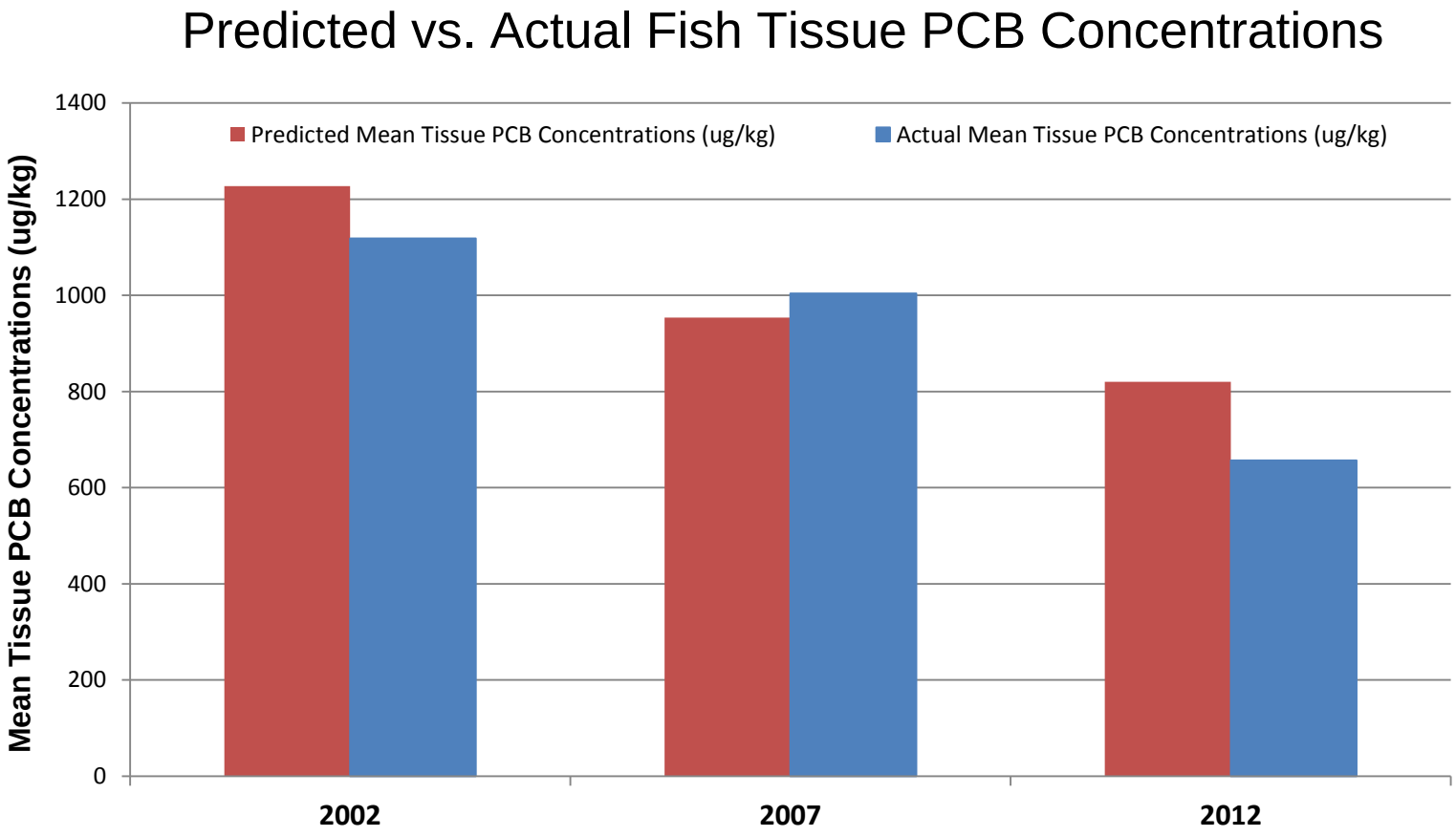
# Total PCB Concentrations in Surface Sediments 2004 vs. 2014



# Median Total Surface Sediment PCB Concentrations by River Mile: 2004 vs. 2014

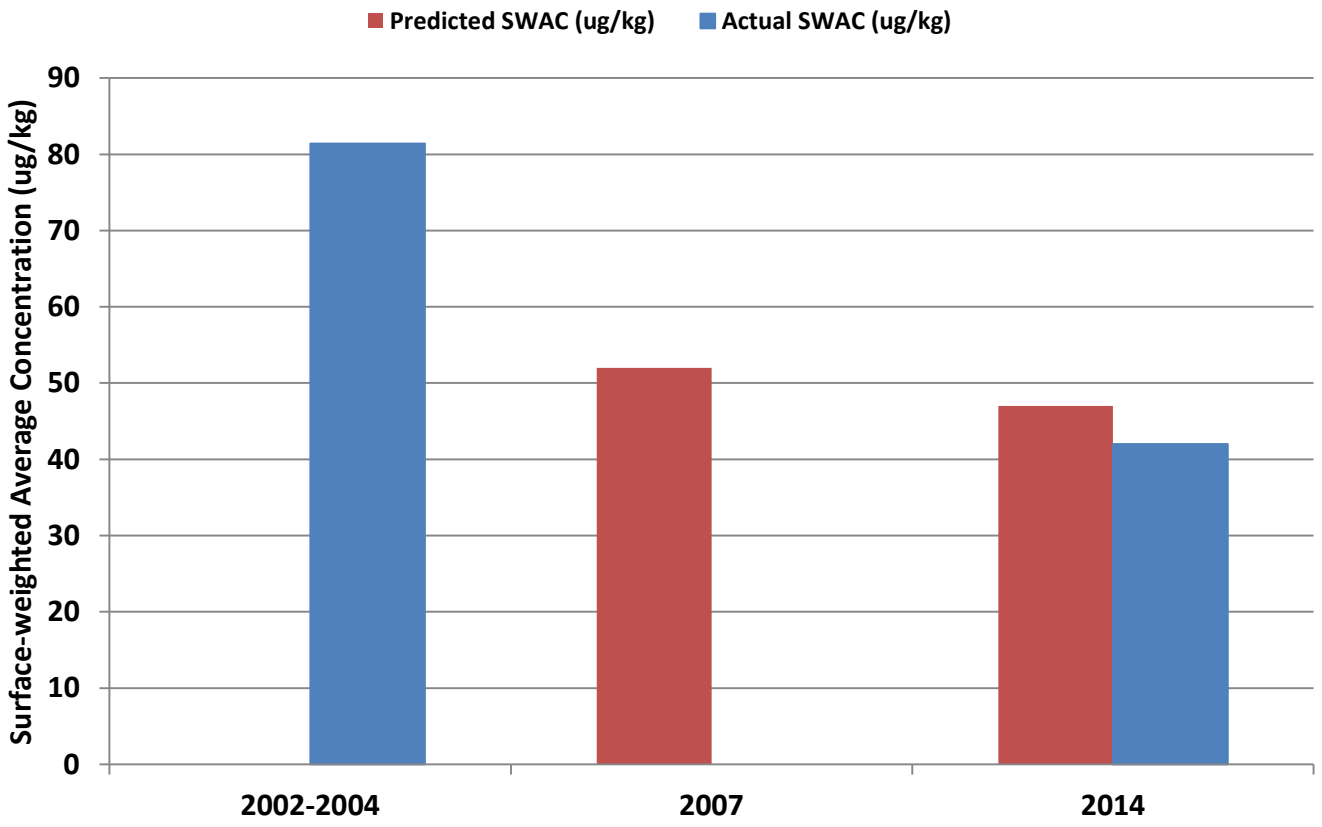


# Coupled Sediment Recovery and Dynamic Food Web Model



# Coupled Sediment Recovery and Dynamic Food Web Model

Predicted vs. Actual Surface-weighted Average PCB Concentrations



# 2013 Sediment Profile Investigation

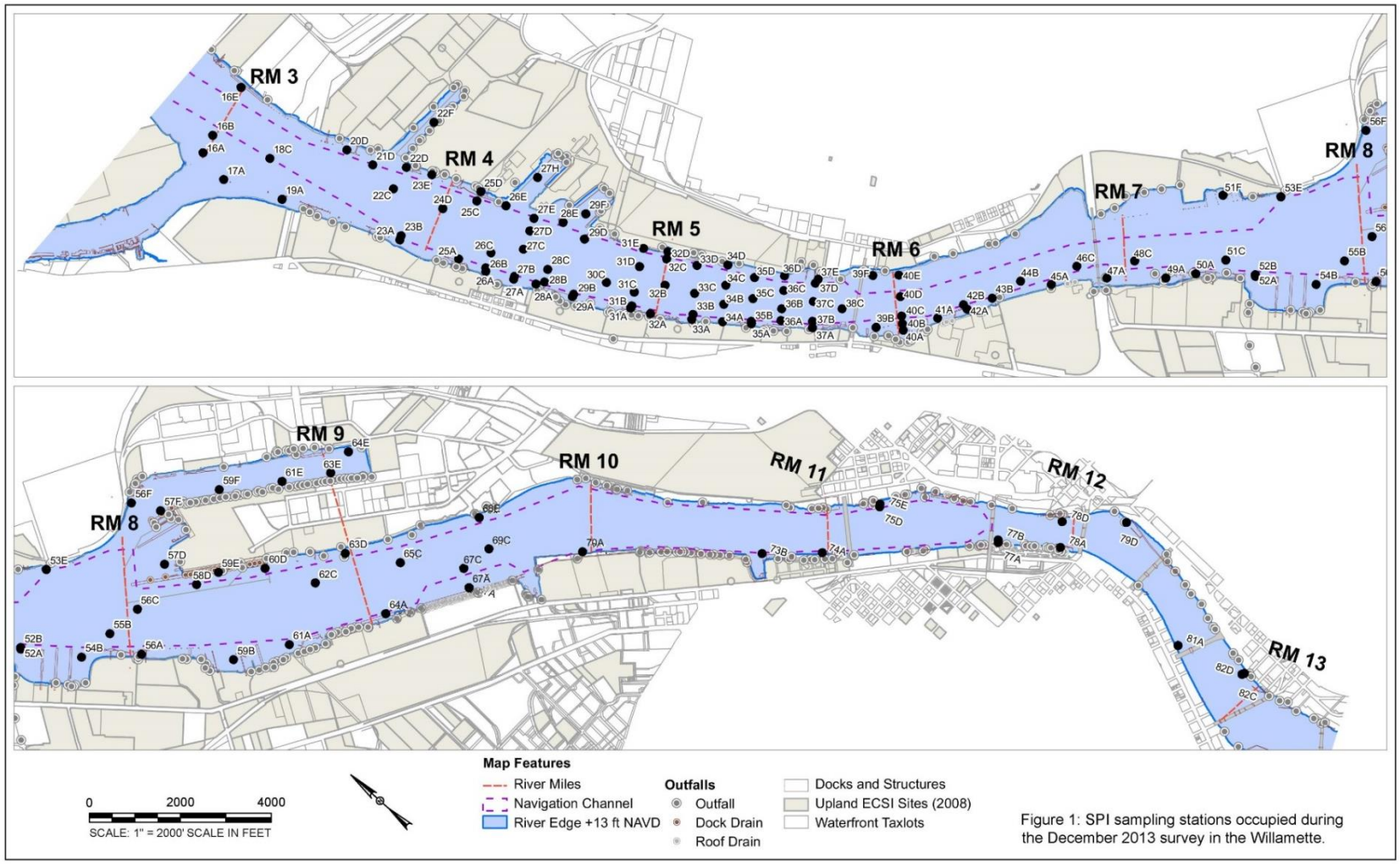
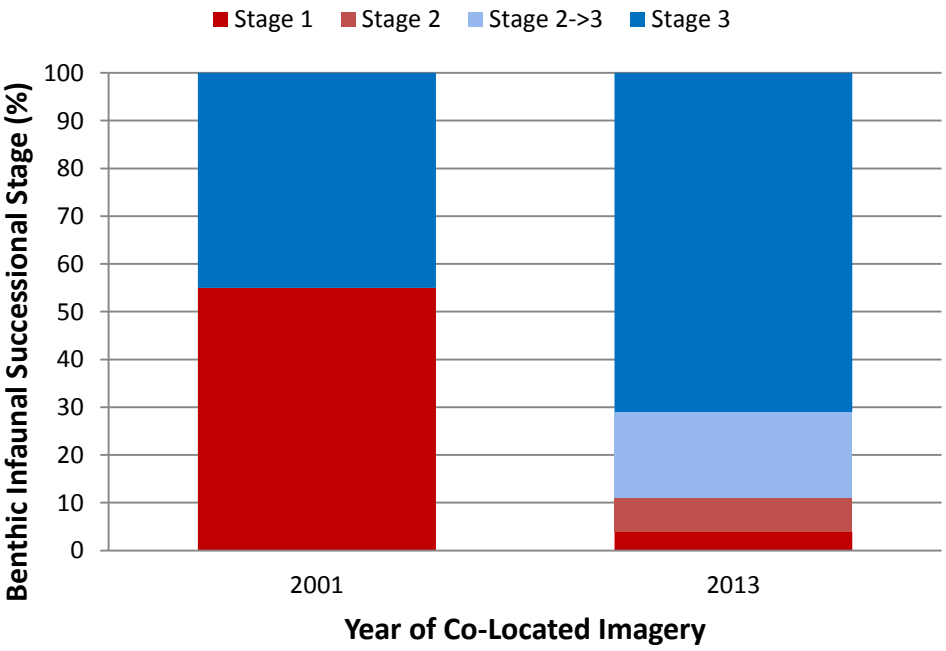



Figure 1: SPI sampling stations occupied during the December 2013 survey in the Willamette.

# Recovery in Benthic Community Health




Stage 1 – Opportunistic colonization by small surface dwelling organisms.

Stage 2 – Transitional succession by shallow-dwelling, more sophisticated organisms. Progressing to Stage 3.

Stage 2 on 3 – Intermediate stage with some evidence of Stage 3 present.

Stage 3 – Higher-order, longer-lived, deeper-dwelling organisms, favorable environment.

# Summary and Conclusion

- Natural recovery processes are well underway and have significantly improved sediment quality in Portland Harbor
- Monitored natural recovery rates confirm the modeling and assumptions in the RI/FS
- Natural recovery is less intrusive than active remediation options, and needs to be fully considered and utilized by EPA as a significant component in finalizing the FS and selecting the remedy

We are committed to cleaning up Portland Harbor and cooperating with EPA to identify an appropriate remediation option that accounts for current river conditions, including ongoing natural recovery.